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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,732	03/08/2002	Hiroshi Kajiyama	3620-4014	5009

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EXAMINER

BEFUMO, JENNA LEIGH

ART UNIT PAPER NUMBER

1771

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

*Supplemental*  
**Office Action Summary**

Application No.

10/018,732

Applicant(s)

KAJIYAMA ET AL.

Examiner

Jenna-Leigh Befumo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-11, 76 and 77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-11, 76 and 77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The following action is a supplemental response to the response filed on October 26, 2005. The Office Action mailed on December 30, 2005 is vacated because the Office Action was mistakenly listed as a Final rejection on the Office Action Summary. The present Office Action is a non-final rejection.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 26, 2005 has been entered.

#### ***Response to Amendment***

3. The Amendment submitted on October 26, 2005, has been entered. Claims 1 – 4 and 12 – 75 have been cancelled. Claims 5 – 7 have been amended and claims 76 and 77 have been added. Therefore, the pending claims are 5 – 11, 76, and 77.

4. The 35 USC 103 rejections based on JP 10287753 A are being modified to include Kolstad et al. (6,114,495) to address the monomer content and viscosity requirements in response to the applicant's arguments (response, pages 7 – 11).

#### ***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 5 – 8, 76, and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10287753 A in view of Kolstad et al.

The features of JP 10287753 A have been set forth in the previous Office Action. JP 10287753 A is producing PLA. However, JP 10287753 A fails to discuss the polymerization process and the desired viscosity of the material. Kolstad et al. discloses that it should be understood that preferred melt stable PLA composition for fiber formation preferably include less than 0.5% by weight lactide monomer concentration (column 24, lines 23 – 35). Thus, it would have been obvious to one of ordinary skill in the art to reduce the monomer concentration of the PLA composition to below 0.5% as taught by Kolstad et al. in the PLA composition disclosed by JP 10287753 A to remove impurities to produce a melt-stable polymer composition.

Further, Kolstad et al. discloses that for fiber formation PLA polymer should have a melt flow index of between 10 and 50 (column 24, lines 10 – 12). While the melt flow index is not the exact same measurement as relative viscosity, the measurements and relative teaching, are both drawn to the rate at which the polymer flows. Further, Kolstad et al. discloses that the molecular weight of the polymer material will be limited by the pressure drop produced by the material through the extrusion die (column 24, lines 5 – 10). Hence, Kolstad et al. discloses that it is desired to control the viscosity of the polymer material to control how well the material will run on the extrusion machinery. Hence, it would have been obvious to one of ordinary skill in the art to optimize the viscosity of the polymeric material so that it will process efficiently on the extrusion equipment.

Finally, the tensile strength, concentration ratio in boiling water, birefringence, and thermal peak stress temperature will be a result of the polymerization process and the polymer chains size and structure. Although the limitations of the tensile strength, concentration ratio in boiling water, birefringence, and thermal peak stress temperature are not explicitly taught by JP 10287735 A, it is reasonable to presume that said limitations would be inherent to the invention. Support for said

presumption is found in the use of similar materials (i.e. L-isomer lactic acid monomers, and a tin catalyst) and in the similar production steps (i.e. a ring-opening polymerization process initiated by a tin catalyst) used to produce the polylactic acid. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. Therefore, claims 5 – 8, 76, and 77 are rejected.

7. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10287753 A and Kolstad et al. as applied to claim 5 above, and in further view of Matsui et al. (6,174,602).

The rejection has been changed to include Kolstad et al. into the rejection, as set forth above. Claims 9 and 10 are rejected in further view of Matsui et al. for the reasons of record.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10287735A and Kolstad et al. as applied to claim 5 above, and in further view of Matsui et al. and *Wellington Sears Handbook of Industrial Textiles* (pages 57 – 60).

The rejection has been changed to include Kolstad et al. into the rejection, as set forth above. Claim 11 is rejected in further view of the *Wellington Sears Handbook of Industrial Textiles* for the reasons of record.

#### ***Response to Arguments***

9. Applicant's arguments filed October 26, 2005 have been fully considered but they are not persuasive. The applicant argues that the features of viscosity and monomer content were not sufficiently supported by the prior art and was based on Official Notice. As set forth above, another reference has been added to the rejection to support that it is known to remove monomer impurities and to have a desired flow range. While the reference doesn't specifically address the relative viscosity of the PLA composition, it is discussing the melt flow index of the polymer which measures how the quickly the polymer flows through a confined space. This measurement directly

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correlates to the relative viscosity. Further, the viscosity would be a result of the molecular weight and the crystallinity of the composition. Thus, the viscosity while it can be controlled by additives, it is a result of the polymer structure produced by polymerizing the PLA composition. This is also true for the birefringence and shrinkage of the PLA material. As set forth above, these factors are presumed to be inherent since the same materials and composition is used to produce the polymer and PLA fibers. Thus, the applicant must provide sufficient evidence to show that these properties would not be inherent. The applicant's evidence provided in the disclosure is not directly related to the prior art and therefore, is not sufficient to overcome the rejection. Thus, the claims are rejected.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (571) 272-1472. The examiner can normally be reached on Monday - Friday (8:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jenna-Leigh Befumo  
December 26, 2005